CLAIMS

1. A molecular composite composed of a core molecule having one or more active sites, and having a plurality of smaller labile residues reversibly attached to the core molecule, the attachment of said labile residues causing an alteration of the ability of the core molecule to provide the activity associated with said active site or sites, the labile residue or residues being dissociable from the core molecule by exposure of the molecular composite to electromagnetic energy so as to result in at least partial restoration of the activity associated with said active site (s).

2. A molecular construct for use in the targeted treatment of a localised entity comprising a group of cells within a human or animal body, which entity is distinguished from surrounding tissue by the presence of a specific determinant which is either absent from or present in substantially lower concentration in the surrounding tissue, the molecular construct comprising a targeting portion capable of binding to said specific determinant, and a functional portion capable of causing the release of a biochemically active agent which has an effect on the entity, the molecular construct further comprising at least one labile residue attached by a photocleavable bond either to said targeting portion or to said functional portion, said residues(s) effecting a substantial diminution of the ability of the respective portion to perform its aforementioned function, the residue(s) being dissociable from the remainder of the construct upon exposure to electromagnetic radiation of appropriate energy, to restore at least a substantial portion of said ability.

3. A method of treating a localised entity comprising a group of cells in a human or animal body which entity is distinguished from surrounding tissue by the presence of a specific determinant which is either absent from or present in substantially lower concentration in the surrounding tissue, the method consisting of the following steps, in any order, provided that step a) precedes step c):-

a) administering to said human or animal body a molecular construct comprising a targeting portion capable of binding to said specific determinant. and a functional portion capable of causing the release of a biochemically active agent which has an effect on the entity, the molecular construct further comprising at least one labile residue attached by a photocleavable bond either to said targeting portion or to said functional portion, said residues(s) effecting a substantial diminution of the ability of the respective portion to perform its aforementioned function, the residue(s) being dissociable from the remainder of the construct upon exposure to electromagnetic radiation of appropriate energy, to restore at least a substantial portion of said ability,

b) administering a prodrug capable of being converted by said functional portion to an active drug having a desired therapeutic effect in relation to said entity, and

c) applying electromagnetic energy to the entity to effect dissociation of said residues,

said molecular construct and said prodrug being administered in amounts such that said drug is generated in a therapeutically effective amount.

4. A method of detecting the presence of a test analyte in a test solution comprising the steps of:

(a) providing a substrate (such as a microtitre plate) having bound thereto a plurality of binding groups, each having at least one accessible active site capable of specifically binding said analyte;

(b) bathing said substrate in a solution containing a plurality of molecular constructs, each comprising a targeting portion capable of binding to said test analyte when said species is bound to a said binding group, and a detectable portion whose presence may be detected either directly or indirectly, at least the targeting portion of each molecular construct having attached thereto one or more labile residue(s), each attached by means of a photocleavable bond, the residue(s) effecting a substantial diminution of the ability of said targeting portion

to bind said analyte and being dissociable from the remainder of the construct upon exposure to electromagnetic radiation of appropriate energy;

(c) adding the test solution whose content of test analyte is to be ascertained, so that the test analyte (if present) binds to said binding groups on said sunstrate;

(d) exposing the substrate to electromagnetic energy to cleave the labile residues from said molecular constructs, to enable the constructs to bind to the substrate-bound test analyte, (if present);

(e) flushing unbound molecular constructs from said substrates; and

(f) determining the presence of said detectable portions of said constructs.

5. A product or a method according to any preceding claim wherein the ratio of the molecular weight of a single labile residue to either the core molecule or one of said portions is at least 1 to 10.

6. A product or method according Claim 5 wherein the ratio is 1-30.

7. A product or a method according to Claim 5 or 6 wherein the ratio is 1-100.

8. A product or a method according to any preceding claim wherein the molecular weight of said labile residue is between 100-400.

9. A product or a method according to any preceding claim wherein said core molecule or at least one of said portions is a macromolecule.

10. A product or a method according to Claims 1 to 4 wherein said core molecule or said targeting portion is an antibody.

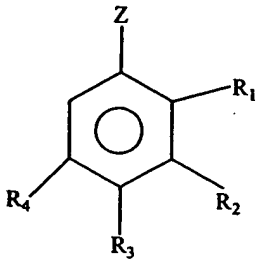
11. A product or method according to Claims 1-4 wherein said core molecule or said functional portion or said detectable portion is an enzyme.

12. A product or method according to Claims 1-4 wherein said core molecule or said functional portion or said detectable portion is an toxin.

13. A method according to Claim 4 wherein said binding groups are antibodies.

14. A method according to Claim 4 wherein the detectable portion may be detected either directly or indirectly.

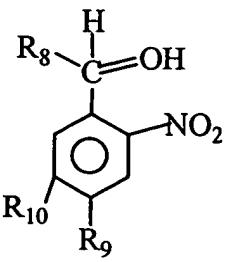
15. A product or a method according to any preceding claim wherein the electromagnetically labile residue comprises.



wherein R1 = H or NO_2; R_2 = H, N_3 NO_2 or OCH_3; R_3 = H,OCH_3 NO_2, and R4 = H, NO_2 or OCH_3; and preferably wherein at least one of R_1, R_2, R_3 and R_4 is NO_2; and Z is $C(R_5)OH$ - with R_5 = H, CH_5, C_2H_5, or an aryl group such as o-nitrobenzyl or phenyl; a glycol such as ethylene glycol an oxycarboxyl group of formula $-R_6-O-CO-$ with R_6 = a bond, or a straight or branched lower alkyl group (ie with 1 to 6 carbon atoms, preferably 1 to 3 carbon atoms); an aryl group such as -CO-Y with Y =

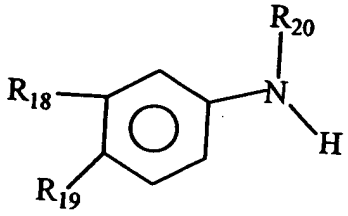
$-\overset{R}{\underset{|}{C}}H-$ where R = H or CH_3; -S-; or $-\overset{R}{\underset{|}{N}}-$ with R, = lower alkyl group, cyclohexyl, or an aryl group such as benzyl or -CH2-C6H6.

16. A product or a method according to Claims 1 to 14 wherein said electromagnetically labile residue comprises



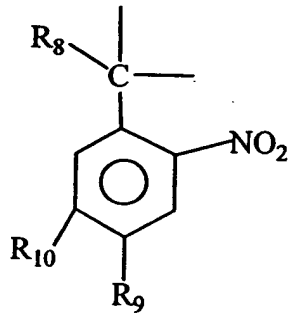
wherein R_8 = H, CH_3, C_2H_5; o-nitrobenzyl, or phenyl; and R_9 and R_{10} are, independently, H or -OCH_3, or sites for irreversible protein or antibody coupling.

17. A product or a method according to Claims 1 to 14 wherein said electromagnetically labile residue comprises



wherein R_{18} and R_{19} are, independently, H or -OCH_3, and R_{20} is CH_3, C_4H_9, cyclohexyl, benzyl or phenly-CH_2-.

18. A product or a method according to Claims 1 to 14 wherein said electromagnetically labile residue comprises



with R_8 =H,CH_3 or C_2H_5 and R_9 and R_{20} = OCH_3.